



Key Vocabulary

vehicle	something used to carry people or objects from one place to another
wheel	a circular object that spins below the vehicle to help it move
axle	a rod on which one or more wheels can rotate, either freely or be fixed to and turn with the axle
chassis	the base frame for a vehicle
dowel	a wooden rod
friction	resistance when two things rub together

Everyday Examples



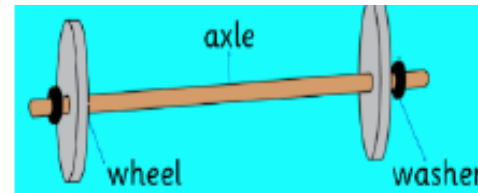
In 1896, Henry Ford created a vehicle called a Quadricycle.



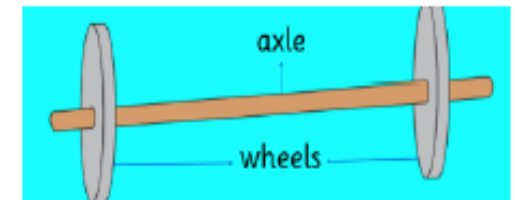
In 2001, Dean Kamen invented the Segway. It is a two-wheeled, self-balancing electric vehicle.



Mechanisms – Wheels and Axles



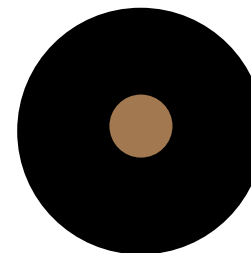
The **axles** of a vehicle can be attached tightly to the **chassis** with **free** wheels that turn when it moves.



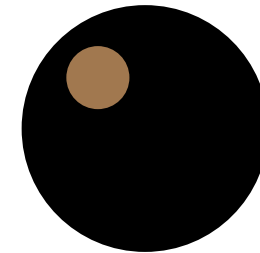
The **axles** can be free with tightly **fixed** wheels that turn with the **axle** or through the **chassis**.

Pivot Point

central



not central



The pivot point of a wheel needs to be central otherwise the vehicle will not turn smoothly.